

WHAT IS CLAIMED IS:

Claim 1. A mounting structure of a semiconductor device mounted on a mounting substrate, comprising;

a semiconductor device having a bump electrode which has an acute tip on top,

a mounting substrate on which said semiconductor device is mounted, and

a conductor pattern formed on said mounting substrate, wherein said acute tip is gradually depressed on said conductor pattern of said mounting substrate.

Claim 2. A mounting structure of a semiconductor device mounted on a mounting substrate as claimed in Claim 1, wherein said acute tip of the bump electrode is treated with a leveling process as to form a small flat surface before depressed on said conductor pattern of the mounting substrate.

Claim 3. A mounting structure of a semiconductor device mounted on a mounting substrate as claimed in Claim 2, wherein heat is added to said bump electrode of the semiconductor device so that said bump electrode is transformed during depression of the bump electrode to the conductor pattern of the mounting substrate.

Claim 4. A mounting structure of a semiconductor device mounted on a mounting substrate as claimed in Claim 3, wherein said mounting substrate is a printed circuit board and said bump electrode is depressed on the conductor pattern formed on the printed circuit board.

Claim 5. A mounting structure of a semiconductor device mounted on a mounting substrate as claimed in Claim 4, wherein said semiconductor device has an electrode pad and said bump electrode is formed on this electrode pad.

Claim 6. A mounting structure of a semiconductor device mounted on a mounting substrate as claimed in Claim 1, wherein said acute tip of the bump electrode has a shape of cone.

Claim 7. A process of mounting a semiconductor device on a

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mounting substrate, said process comprising the steps of,

bonding a plurality of bump electrodes each having an acute tip on a pad electrode formed on a semiconductor device,

leveling all of said acute tips of the bump electrodes as to have the same height,

positioning said tip of the bump electrode on a conductor pattern of a mounting substrate, and

mounting said acute tip of the bonding electrode on said conductor pattern of the mounting electrode by depressing gradually.

Claim 8. A process of mounting a semiconductor device on a mounting substrate as claimed in Claim 7, wherein heat is added to said bump electrode in order to be transformed during said mounting step.

Claim 9. A process of mounting a semiconductor device on a mounting substrate as claimed in Claim 8, wherein said acute tip of the bump electrode is formed to have a cone-shape at said bonding step.

Claim 10. A process of forming bump electrodes on a semiconductor device to be mounted on a mounting substrate, said process comprising the steps of,

providing a conglomeration on an end of a gold wire,

placing said conglomeration of gold wire on electrode pads formed on a semiconductor device,

pulling off said gold wire from said conglomeration as to form bump electrodes having an acute tip on each top of said bump electrodes, and

leveling all of said acute tips of said bump electrodes as to have a small flat surfaces on each top of the bump electrodes.

Claim 11. A process of forming bump electrodes on a semiconductor device to be mounted on a mounting substrate as claimed in Claim 10, wherein each of said electrode pads is made of aluminum and said conglomeration of the gold wire is heated by ultrasonic heating as to make an alloy of the gold and the aluminum during said placing step.

Claim 12. A process of mounting a semiconductor device on a mounting substrate, said process comprising the steps of,

providing a conglomeration on an end of a gold wire,

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placing said conglobation of gold wire on an electrode pad formed on a semiconductor device,

pulling off said gold wire from said conglobation as to form a bump electrode having an acute tip on its top,

leveling all of said acute tips of the bump electrodes as to have the same height,

positioning said tip of the bump electrode on a conductor pattern of a mounting substrate, and

mounting said acute tip of the bonding electrode on said conductor pattern of the mounting electrode by depressing gradually while transforming said bump electrode formed on the electrode pad of the semiconductor device.

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